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USDA GRADE STANDARDS FOR FOOD

HOW THEY ARE
DEVELOPED
AND USED



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USDA GRADE STANDARDS FOR FOOD— HOW THEY ARE DEVELOPED AND USED



U.S. Department of Agriculture grade standards for food, along with standards for other agricultural products, have been developed to identify the degrees of quality in the various products, and thereby aid in establishing their usability or value.

The first U.S. grade standards established by the U.S. Department of Agriculture for a food product were for potatoes in 1917. Since that time, grade standards have been established for many other food products. The dates in parentheses indicate the date of first establishment of official U.S. grade standards for the commodity or commodity groups:

Fresh fruits, vegetables, and nuts (1917); butter, cheese, nonfat dry milk, and certain other dairy products (1919); rice, dry beans, peas, and related products (1924); eggs (1925); poultry (1930); beef, veal and calf, and lamb and mutton carcasses (1926); canned, frozen, and dried fruits and vegetables, and other related products such as preserves (1928).

U.S. grade standards are also available for the various grains, but not for the food products, such as flour or cereals, into which grain is processed.

A complete list of the food products for which U.S. grade standards are in effect is in Agriculture Handbook No. 341, USDA Standards for Food and Farm Products.

USDA provides grading services—official certification of the grade of products—for each commodity group. Grading is voluntary, except in certain instances, and is provided on a fee-for-service basis.

Early Federal work on grade standardization of food products was done under Congressional authorization for studies on the marketing of farm products (1913). Standardization and voluntary grading services are now conducted by the authority of the Agricultural Marketing Act of 1946.

Purpose of the Standards

Although grade standards for each commodity group were developed independently of each other, the original purpose of the standards was basically the same: To aid in the marketing of farm products by providing a common language for wholesale trading and a means of measuring value or a basis for establishing prices. The end aim was to bring to consumers the quality of product they wanted, the idea being that retailers would purchase the quality of products their customers wanted.

State and local standards and trade terms had existed for some time before establishment of official U.S. grade standards. The need for standards which would be applicable nationwide, brought on especially by the growth of long-distance trading and inauguration of the Federal-State Market News Service, gave impetus to development of the U.S. grade standards. In addition, the Food Production Act of August 10, 1917 encouraged the development and use of standards as part of producing the food needed for the military forces and U.S. allies in World War I.

The purpose of the market news service was to aid buyers and sellers by providing factual, unbiased reports on prices and supplies at production points and wholesale markets. Prices quoted by the market news service in the different markets could only be meaningful if they were based on products of comparable quality.

Note: Single copies of references mentioned in this publication may be obtained from the Information Division, Food Safety and Quality Service, USDA, Washington, D.C. 20250.

Other early purposes for developing grade standards were to help establish loan values for products in storage and to assure that products purchased by the Government (for example, by the military services) were of acceptable quality.

The original purposes are still served by the grade standards, but the standards have found many other uses. Private procurement agencies—restaurants, shipping lines, and other feeding establishments—as well as Federal and State government agencies, use the grade standards as specifications in purchasing foods. Contracts between packers or processors and producers are often based on the grade of the product as delivered to the processing plant, and processors use the standards as aids in quality control. Trading of food products on the futures market is also often based on official grades.

As the USDA grades appear more frequently on various foods, consumers have come to recognize and use them.

Criteria for Grade Standards

The U.S. grade standards provide a means of classifying the entire range of quality of a product. Because some products are naturally more variable than others, it is necessary to have more grades for some products than for others. Quality in general refers to the usefulness, desirability, and value of a product—its marketability—but the precise definition of quality depends on the commodity. The standards define the quality requirements of each grade of a product. Criteria for grade standards for the various commodity groups are as follows.

Beef, veal and calf, lamb and mutton. Quality grades predict the “eating quality” of meat. Eating quality is indicated by the color, firmness, texture, and marbling of the meat in relation to its maturity or age. The range of quality in beef requires eight grades; in veal and calf, five; in lamb and mutton, five. Usually only three grades are sold in retail stores—U.S. Prime, Choice, and Good.

In addition to quality grades for beef and lamb, there are also U.S. yield grades, which are used to indicate the differences in yield of trimmed retail cuts from carcasses. The yield grades are described in Marketing Bulletin No. 45, USDA Yield Grades for Beef, and Marketing Bulletin No. 52, USDA Yield Grades for Lamb.

Poultry. Standards measure “table quality” in terms of the proportion of edible meat in relation to bone, the “finish” of the bird, and freedom from defects such as cuts, tears, and bruises. Tenderness is not a grade factor, as it relates chiefly to the age difference between young and older birds and is indicated separately in labeling (for example, “fryers”). Turkey, chicken, duck, goose, guinea, and squab may be graded U.S. Grade A, B, or C.

Eggs. Standards provide for quality grades and for weight classes (size). Standards for quality relate to the appearance of the egg and its suitability to various methods of cooking. They define such factors as thickness of the albumen, condition of the yolk, and condition of the shell. Standards for size are based on the weight of a dozen eggs—a 3-ounce weight difference is provided between sizes. Eggs are graded U.S. Grade AA, A, or B. Sizes are U.S. Jumbo, Extra Large, Large, Medium, Small, and Peewee. One dozen Large eggs weighs at least 24 ounces.

Butter and cheese. Standards define levels of eating quality, based on flavor, texture, and body. U.S. grade names are usually U.S. Grades AA, A, and B.

Instant nonfat dry milk. Quality factors are flavor, bacterial count, dispersibility, and moisture content. The U.S. grade name is U.S. Extra.

Fresh and processed fruits and vegetables. Standards for both fresh and processed fruits and vegetables vary with the individual product. They usually define such factors as color, shape, size, maturity, and number and degree of defects. For some products, especially those that are processed, flavor and tenderness are also rated. The typical range of grades for fresh fruits and vegetables is U.S. Fancy, U.S. No. 1, and U.S. No. 2. U.S. No. 1 is the chief trading grade for most products. Grade names for processed fruits, vegetables, and related products are U.S. Grades A, B, and C.

Rice, dry beans, and peas. Standards measure uniformity of shape, size, and color, moisture content, damage, and foreign material. Moisture measurement is significant because it determines the amount of dry matter of the commodity, and more important, its storability. Grades range from U.S. No. 1 to U.S. No. 6 for rice; U.S. No. 1 to U.S. No. 3 for dry peas; and U.S. No. 1 to U.S. No. 3 for dry beans, except that the highest grade for dry lima beans is U.S. Extra No. 1.

Grading Services

At the same time as development of U.S. grade standards, and in some instances preceding them, USDA began to establish an official system of grading foods. Originally limited in scope, it has become nationwide and now is available in all major production areas and major destination markets in all States. From the outset, USDA has encouraged cooperative activity with State agencies. Commodities may therefore be officially graded by Federal graders or by State personnel licensed by USDA and supervised by Federal graders.

Anyone who has a financial interest in a product—for example, a packer, processor, distributor, wholesale buyer, or retailer—may request official grading. A fee is charged for the service. Users of the grading service receive official certificates describing the quality of the product at the time it is graded. These certificates are accepted as legal evidence in court.

Products may be graded in the producing area; at assembly, packaging, milling, or processing plants; at terminal markets; in a railcar or a receiver's warehouse or store.

Various types of grading and related services are available; for example, in-plant or continuous grading during packing or processing; grading of specific lots of a product in a plant or warehouse; grading of a sample of the product; and grading of raw products to be used in processing. See AMS-520, Official Grade Standards and Inspection for Fresh Fruits and Vegetables; Marketing Bulletin No. 46, USDA's Acceptance Service for Poultry and Eggs; Marketing Bulletin No. 47, USDA's Acceptance Service for Meat and Meat Products; Marketing Bulletin No. 48, Dairy Inspection and Grading Services; and Marketing Bulletin No. 56, Inspection and Grading Services for Processed Fruits and Vegetables.

Grade Labeling of Consumer Packages

Although the grade standards were originally developed to aid in wholesale trading, through the years various packers and processors began to use the U.S. grade name on containers of food in the form it reached the consumer. Packages of butter, for example, were labeled by grade in 1924.

The USDA grades have been used on retail cuts of beef since 1927. The grade mark is applied to the carcass or to wholesale cuts in a long, ribbon-like imprint, so the grade stamp carries through on most cuts.

About 30 years ago, grade standards for shell eggs, chickens, and turkeys were developed specifically to be used in grading these products for retail sale. The grade marks for eggs, chickens, and turkeys are widely used at the retail level.

Grade labeling of fresh fruits and vegetables dates from about 1930, when shippers began to pack these products in packages for consumers. Up to that time, the grade standards were applied only to the wholesale trading units, such as 100-pound bags of potatoes. Special consumer grades were developed for some products, but they are seldom used. The wholesale grade standards for many fresh fruits and vegetables have therefore been revised in recent years to provide for grading products in consumer packages.

Because canned and frozen fruits and vegetables are packed in retail containers at the time of processing, most of the grade standards for these products are designed to classify the quality of the retail product. Grade labeling of canned and frozen fruits and vegetables began in the late 1930's.

Rice, dry beans, peas, and related products are officially graded at the milling plant in wholesale lots, and the U.S. grades are seldom used on consumer packages.

Grade labeling is not required by Federal law, even though the product has been officially graded. For most commodities, if an official U.S. grade name or grade shield is used, however, the product must have been officially graded. The only exceptions are for fresh fruits, vegetables, and a few other products, where the practice of grade labeling without official grading has existed through the years. Some State and local laws and industry marketing programs do require grade labeling of certain foods.

Foods consumers are most likely to find carrying the U.S. grade name are beef, veal, lamb, chicken, turkey, butter, and eggs. Some canned and frozen fruits and vegetables, and a few fresh fruits and vegetables, when they are sold in packages rather than in bulk, are also labeled by U.S. grades.

Development of Grade Standards

Three basic principles are followed in developing grade standards. First of all, there must be a need for the standards. Second, because use of the standards and grading is voluntary, there must be interest and support from the industry. And third, the standards must be practical to use.

Requests for standards may come from trade or consumer groups, State Departments of Agriculture, or others. USDA standardization specialists, who develop the standards, may initiate standards to more accurately reflect the type of product being produced. New standards are developed as new products come on the market or increase in consumer use. Recent examples are the grade standards for frozen hash brown potatoes and Colby and Monterey Jack cheese.

The first step in developing standards is study of the product to determine the quality factors involved and the range of quality produced. Standardization specialists investigate cultural or production practices in major producing areas; varieties or types; harvesting, slaughtering, packing, and processing techniques; and consumer buying practices. They may call upon statisticians for aid in drawing up plans for taking samples of the product in various parts of the country and in determining the criteria for evaluating quality.

They interview producers, packers, processors, shippers, receivers, scientists and marketing specialists at experiment stations and universities, and others. Economic studies may be made to determine the attributes that are important to sellers and buyers, including the final consumers. Where possible, laboratory studies are made to find ways of measuring the physical differences in quality.

Extensive data are collected on all quality factors and on defects that occur in the product. For most commodities (except meat carcasses, which are graded individually and dairy products which are graded in batches), an allowance must be made within each grade for a certain percentage of individual units within a lot that do not meet the standards. This is done because of practical limitations in sorting products into grades. The speed necessary in handling perishable products makes it almost impossible to remove all defective units. The "tolerance" (number of defective units or types of defects

allowed) is more restrictive in, for example, U.S. Grade A than U.S. Grade C.

Studies are made in processing or packing plants, or wherever the products may be graded, to determine if the standards are practical to use. Statistical methods are used to help insure the validity of the testing procedures. For example, the capability of processing equipment to size a product within certain limits must be determined. Standards must be adjusted to processing methods—what is capable of being produced—within the limits of what the public is willing to pay for a product.

If major changes are being considered or if the proposed action would have a significant effect on the food industry or the consuming public, USDA issues a notice of intent before drawing up a formal proposal. The notice of intent, which may be issued as a press release or a study draft, explains the proposal that is being considered and requests ideas and recommendations. The notice is distributed as widely as possible to members of the affected food industry, trade associations and periodicals, consumer organizations and writers, and the news media. A specified time is allowed for comment. On request, standardization specialists may meet with interested groups to explain and demonstrate what the proposal means.

A notice of intent may also be presented at public briefings, at which standardization specialists explain the proposal under consideration. Notification of such briefings is made through the news media and trade and consumer organizations. In addition, invitations to attend briefings may be sent directly to members of the food industry, consumers, and other known to be interested in actions on grade standards. Written copies of the proposed action are distributed and time for written comment following the briefings is provided.

Following the time for comment on a notice of intent, standardization specialists evaluate all comments and decide whether to proceed to a formal proposal or to drop the proposed action, or whether changes or further study or additional time for comment is needed.

If it is decided to proceed with the action, the specialists draw up proposed standards, incorporating appropriate changes recommended during the comment period. Notices of intent are not issued for proposals involving minor changes

or those without significant effect on consumers or the food industry.

The proposed standards are published in the Federal Register as a Notice of Proposed Rule-making, and a specified time period is set to allow interested persons to study and comment on the proposal.

A press release is issued at the same time to notify industry members, consumer groups, trade organizations, State Departments of Agriculture, and anyone concerned. Copies of the proposed standards are sent to those who request them.

All comments are taken into account in considering whether the standards should be issued as proposed, with amendments, or withdrawn.

If it is decided to promulgate the standards, they are published in final form in the Federal Register, with a specified date on which they are effective. A press release is again issued.

A revision of grade standards follows the same process. Revisions are often based on changes in marketing practices or improvements in production or processing methods that bring about improvements in the quality of a product. Because of the many kinds of sauces and seasonings available in canned dried beans by 1976, for example, the 1947 standards were revised and separate standards were established for canned pork and beans and for canned baked beans, to recognize the differences in texture, flavor, and consistency of the three dried bean products.

Plant Sanitation

Official grading of meat and poultry is done only in plants under Federal or State continuous inspection for wholesomeness. The Food and Drug Administration makes sample checks from time to time on the wholesomeness of other food products. USDA, however, has its own sanitation requirements for certain types of plants and grading of certain products. Official grading of a manufactured dairy product is done only after a plant has been surveyed by USDA dairy inspectors and the quality of raw material, sanitation, condition of the plant and equipment and processing procedures have been approved. In egg packing plants, the official grader is responsible for checking the sanitation of the plant, seeing that the eggs are washed properly and held

under proper conditions, and checking all packing equipment and procedures.

Applying the Standards

The standards must be prepared in terms that can be easily understood and uniformly applied, because much grading is subjective. Standardization specialists prescribe specific physical and chemical tests for certain products and prepare handbooks for official graders to use in interpreting the standards. They also prepare models, color slides, and photographs, and such other materials as will aid in uniform interpretation of the grade standards. Training of graders is also an important part of maintaining uniformity.

The method of officially grading a product depends on the nature of the product, the degree of quality variation in the product, how it is processed or packed, and the techniques available to objectively measure quality factors. For poultry, eggs, and fresh and processed fruits and vegetables, the official graders certify the grade of a quantity or lot of the product by "check-grading" a representative sample of the lot, usually after it has been sorted into grades by plant workers.

Sampling plans are developed to assure the sample adequately represents the lot being graded, whether grading is done during processing of the product, at a terminal market or warehouse, or elsewhere. USDA statisticians, working with standardization specialists, have developed sampling plans based on acceptable quality level (AQL) and sampling risk or error.

AQL refers to the maximum number of defects or defective units acceptable per hundred units. AQL's can be written into the standards themselves—as the "tolerance" for defective units or defects allowed within a grade. When AQL's are used, the grading technique involves counting the number and type of defects or defective units in a sample, rather than computing percentages.

Techniques of Grading

Meat. Meat carcasses are graded individually and the official grade stamp is applied to each carcass. For quality determination, graders examine carcasses visually, and no objective measurements are used. Pictures showing degrees of

marbling of beef are provided as aids in determining quality. Since 1965, USDA has required that carcasses be partially separated into hind-quarters and forequarters so that the grader can see a section of the ribeye muscle, an important factor in determining grade.

For determining yield grades of beef carcasses, graders may use a clear plastic grid to measure the area of the rib eye and a ruler to measure thickness of fat. In normal grading practice, these factors are estimated. A mathematical aid, the Yield Grade Finder, which operates somewhat like a slide rule, is used to put together the yield factors to obtain the yield grade. A similar device is available for determining yield grades of lamb.

Poultry. Chickens, turkeys, other poultry, and poultry parts are sorted into grades individually by plant workers and then check-graded by official graders. Official grading is based on AQL's and specified sample sizes. Grading is visual.

Raw, ready-to-cook poultry rolls or roasts have been graded since 1965. The grader examines the whole birds from which the roasts are made and checks during processing for removal of blood vessels, bone chips, and the like.

Eggs. Eggs are graded by plant workers and the official grader spot checks the eggs as they are being packed and after packing. The official grader hand candles the eggs to check for interior quality—depth of air cell, condition of albumen and yolk, and presence of blood spots. Mass scanning techniques are used by plant workers in most plants. In mass scanning, large numbers of eggs are moved across a lighted area at the same time, and plant workers remove under-grades. The eggs are automatically sized. Color charts, showing candled appearance of eggs, broken-out appearance of eggs, and types of shell condition and cleanliness, are used by graders as visual aids.

Butter and cheese. These products are graded by official graders after manufacture. The grader takes samples of each batch or segment of a continuous production run and examines them for flavor, uniformity of color, body, and texture. Color guides are available to check the color of butter.

Instant nonfat dry milk. The official grader takes a sample of the product after manufacture and certifies its quality. He checks for lumps, color uniformity, and specks in the powdered milk, and flavor and odor of the reconstituted milk. A number of laboratory tests are performed: analyses for dispersibility by the modified Moates-Dabbah method; determination of moisture content by the toluol or vacuum oven method; determination of fat, solubility index, titratable acidity, and scorched particles; bacterial estimates by standard plate count and direct microscopic clump count.

Fresh fruits and vegetables. Fresh fruits and vegetables are sorted into grades by plant workers during packing. Federal or Federal-State graders certify the quality of products on a sample basis. Most grading is visual. Internal as well as external quality of many products is examined. Models, color guides, and color photographs are available for graders to check samples for shape, degree of coloring, and degree of defects or damage. AQL's are part of the standards for some citrus products.

As increasing amounts of fruits and vegetables move into processing channels, new methods are developed to grade the raw product before processing. For example, two methods have been developed for automatically sampling tomatoes harvested into bulk bins.

Refractometers are used to determine sugar content of both grapes and citrus products before processing. Potatoes to be used for french frying and chipping are tested for amount of bruising, fry color, or chipping quality. Specific gravity tests are made of potatoes for processing to determine yield.

Mechanical equipment to aid in sampling and grading peanuts is highly developed; it includes pneumatic samplers, an automatic sheller, and a machine that splits kernels.

Processed fruits and vegetables. These products are sorted into grades by plant workers during processing, and checked by USDA graders on a sample basis. Grading is generally based on a scoring system of four quality factors: color, uniformity of size, absence of defects, and char-

acter (tenderness, texture, and maturity). Flavor is also quality rated.

Chemical and physical tests are performed wherever possible. Subjective measurements are also used. Acid and sweetness measurements are made of citrus juices and other fruit products; specific gravity tests are made to determine maturity of peas. Colorimeters are used to measure color of orange juice and tomato products.

Special equipment has been developed to measure flowing quality of such products as catsup and consistency of applesauce. Sizing devices, color guides, and models are available to inspectors.

AQL's are part of the standards for some products.

Rice, dry beans, and peas. The official grader evaluates rice on the basis of a sample he has taken. The amount of broken kernels is determined by sieving. Type samples showing the degree of milling of rice and type samples for certain defects, such as heat damage, are provided to aid in grading.

Dry beans, peas, and like products are also graded on the basis of a sample taken by the grader. Grading is mainly visual, except that electric moisture meters are used to determine moisture content of dry beans and peas, as well as rice.

Quality Control

The grade standards are often used by packers and processors as a basis for quality control. When official grading is done in a plant, the grader aids in quality control because he can advise plant management, during processing and packing, when the product is not meeting the standards. Quality control charts are a part of some of the grade standards in which AQL's are used. With these standards, the grader keeps a running chart of quality during processing, and management can begin to rework the product or take corrective measures immediately when the product falls below the quality they wish to meet.

Quality control in meat production goes back to production of the live animal. Standards for feeder and slaughter animals are designed to be correlated with the carcass standards. Thus, a Choice feeder steer has the potential to develop into a Choice grade slaughter steer, which, in

turn, can be expected to produce a U.S. Choice beef carcass.

For dairy products, quality control includes inspection of the plant, raw materials, and methods of processing before grading service is provided, as well as determining that the product meets the standards.

How to Obtain Copies of Grade Standards

Individual copies of USDA grade standards for beef, veal and calf, lamb and mutton, poultry and eggs, butter and other manufactured dairy products, and fresh and processed fruits and vegetables are available from the Information Division, Food Safety and Quality Service, USDA, Washington, D.C. 20250.

Copies of the standards for rice, dry beans, and peas may be obtained from the Federal Grain Inspection Service, USDA, Washington, D.C. 20250.

Copies of all USDA grade standards for food are printed in three volumes of the Code of Federal Regulations. These volumes, which are revised annually, are available at local libraries or they may be purchased from the Government Printing Office, Washington, D.C. 20402. Volumes containing the grade standards are:

7 CFR, Parts 46 to 51

(fresh fruits and vegetables)

7 CFR, Part 52

(processed fruits and vegetables)

7 CFR, Parts 53 to 209

(rice, dry beans and peas, livestock, meat, eggs, poultry, and dairy products)

Prices may be obtained from the Government Printing Office.

Other Federal Food Standards

Voluntary standards. The U.S. Department of Commerce's (USDC) National Marine and Fisheries Service, under authority of the Agricultural Marketing Act, provides grade standards and voluntary grading services for fishery products similar to those provided by USDA for other foods. Eighteen U.S. grade standards have been developed, covering such products as fish fillets

and fillet blocks, raw fish portions and fish steaks, raw breaded and precooked fish portions and fish sticks, raw headless and raw breaded shrimp, raw and precooked breaded scallops, and raw headless whiting. The grade names are U.S. Grades A, B, and C.

Many of the USDC grade standards also specify the amount of fish component required in the product. For example, raw breaded fish portions must contain 75 percent fish flesh in order to be identified as U.S. Grade A.

The Commerce grading program also provides for official inspection for edibility and wholesomeness of fishery products. Fishery products processed under the U.S. Department of Commerce program may carry the USDC "Federally Inspected" mark and/or the U.S. grade shield. However, as under the USDA grading programs, grade labeling is not required by Federal law, even though products are officially graded. Consumers are most likely to find the U.S. grade name on frozen fish sticks, breaded shrimp, fish portions, and fish fillets.

Any fishery product, whether it has official standards or not, may be inspected for wholesomeness under the Commerce program.

Regulatory standards. Regulatory standards set requirements which products must meet to be legally manufactured, shipped, or sold. USDA's Food Safety and Quality Service (FSQS) and the Food and Drug Administration (FDA) of the U.S. Department of Health, Education, and Welfare have responsibility for various regulatory standards.

USDA standards of composition and identity. Under the Federal Meat Inspection Act and the Poultry Products Inspection Act, FSQS establishes content, preparation, and labeling requirements which certain meat and poultry products must meet to be legally manufactured and sold.

The requirements may cover only meat content of a product (standard of composition) or may go further to establish a standard of identity or definition.

Standards of identity set specific ingredients a food must contain, such as kind and amount of meat, percentage of fat or moisture, and what additives, if any, may be used if a product is to be labeled or identified by a common product name.

Some standards, in addition, set specific processing requirements, such as cooking and other

procedures, to assure wholesomeness and safety of the finished product.

The specific content and labeling requirements help assure consumers that they get what the label says they're getting. Standards, however, do not keep different companies from making distinctive recipes. For example, the USDA content requirement for beef stew specifies the minimum percentage of *beef only* (25 percent) that the stew must contain. It doesn't keep a manufacturer from using combinations of seasonings or increasing the amount of beef to make his product unique.

FDA standards. The Federal Food, Drug, and Cosmetic Act provides for three kinds of regulatory standards for products being shipped across State lines: standards of identity, standards of minimum quality, and standards of fill of container. All these standards are administered by the Food and Drug Administration.

FDA standards of identity (like FSQS's) establish what a given food product is—for example, what a food must be to be labeled "preserves." The FDA standards of identity also provide for use of optional ingredients in addition to the mandatory ingredients that make the product what it is.

FDA has standards of identity for a large number of food products (excluding meat and poultry products, which are covered by FSQS).

Types of products for which standards of identity have been formulated by FDA include: cacao products; cereal flour and related products; macaroni and noodle products; bakery products; milk and cream products; cheese and cheese products; frozen desserts; food flavoring; dressings for food; canned fruits and fruit juices; fruit butters, jellies, preserves, and related products; soda water; canned and frozen shellfish; egg products; oleomargarine and margarine; nut products; canned vegetables; and tomato products.

FDA standards of quality have been set for a number of canned fruits and vegetables to supplement standards of identity. These are minimum standards for such factors as tenderness, color, and freedom from defects. They are mandatory, as opposed to USDA grade standards of quality, which are for voluntary use.

If a food does not meet the FDA quality standards it must be labeled "Below Standard in Quality; Good Food—Not High Grade." Or words may

be substituted for the second part of that statement to show in what respect the product is substandard. The label could read, "Below Standard in Quality; Excessively Broken" or "Below Standard in Quality; Excessive Peel." The consumer seldom if ever sees a product with a substandard label.

When USDA grade standards are developed for a product for which FDA has a minimum standard of quality, the requirements for the lowest grade level USDA sets are at least as high as the FDA minimum. USDA grades for canned tomatoes, for example, are U.S. Grades A, B, and C. U.S. Grade C is comparable to FDA's minimum standard of quality.

FDA standards of fill of container tell the packer how full a container must be to avoid deception. They prevent the selling of air or water in place of food.

Recommended Standards. Under the Public Health Service Act, FDA advises State and local governments on sanitation standards required for prevention of infectious diseases.

The most familiar and widely adopted standards deal with production, processing, and distribution of "Grade A" milk. In contrast to USDA quality grade standards for food, the standards for Grade A milk are largely standards of wholesomeness. The Grade A designation on fresh milk means that it has met State or local requirements, which usually follow provisions of FDA model ordinances.

In recent years, FSQS has issued recommended standards of quality for manufacturing milk and recommended standards for the manufacture of frozen desserts, which are for adoption by State regulatory agencies. These standards are being adopted, in part or in full, by States that produce manufacturing milk.

International Food Standards

The Codex Alimentarius Commission, an international body established in 1963 by the Food and Agriculture Organization of the United Nations and the World Health Organization, develops food standards to protect the consumer's health and facilitate world trade. In 1976, 114 countries were members of the commission.

Standards developed and adopted by the commission are for voluntary acceptance by member governments. When a country accepts a stand-

ard, it becomes mandatory for domestic or imported products within the country.

A Codex standard is essentially a combined standard of identity and minimum standard of quality. These standards deal with composition, additives, labeling, and related factors.

Work on Codex standards is conducted through committees chaired by the participating countries. The United States chairs two committees—Food Hygiene and Processed Fruits and Vegetables. The United States also sends government representatives and industry advisors to take part in the work of most Codex committees.

Some 130 international food standards have been established by the Commission, covering: milk and milk products, fruit juices, quick-frozen and canned fish and fishery products, processed meat products, quick frozen fruits and vegetables, processed fruits and vegetables, cocoa products and chocolate, fats and oils, sugars, foods for special dietary uses, and baby foods.

The United States had accepted 12 of the commodity standards as of April 1976, and 46 other countries had accepted some of the standards.

For information on Codex Alimentarius, see AMS-568, Codex Alimentarius Commission—The United States Role in International Standards for Food Products, or write to: U.S. Codex Coordinator, Food Safety and Quality Service, U.S. Department of Agriculture, Washington, D.C. 20250.